

INPLASY PROTOCOL

To cite: Hassanein et al.
Determinants of serum vitamin D and its metabolites and the reflection on vitamin D status in postmenopausal women: A systematic review. Inplasy protocol 202260116. doi: 10.37766/inplasy2022.6.0116

Received: 30 June 2022

Published: 30 June 2022

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Support: None.

Review Stage at time of this submission: The review has not yet started.

Conflicts of interest:
None declared.

Determinants of serum vitamin D and its metabolites and the reflection on vitamin D status in postmenopausal women: A systematic review

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Review question / Objective: What are the factors that affect vitamin D metabolism and status in post-menopausal women?

Condition being studied: Menopause: Menopause is defined as permanent cessation of menstruation resulting from loss of ovarian follicular activity. The occurrence of the last menstruation can only be diagnosed retrospectively and is usually taken as being final if it is followed by a 12-month bleed-free interval; such women are defined as being post-menopausal.

Information sources: MEDLINE (by PubMed), Embase (by OvidSP), Cochrane Central Register of Controlled Trials (CENTRAL), Google Scholar, Web of Science Core Collection, ClinicalTrials.gov, ISRCTN registry, EU Clinical Trials Register.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 30 June 2022 and was last updated on 01 July 2022 (registration number INPLASY202260116).

INTRODUCTION

Review question / Objective: What are the factors that affect vitamin D metabolism and status in post-menopausal women?

Rationale: Menopause represents an important transition state for vitamin D because of the dependence of vitamin D receptors on estrogen and post-menopausal women are of particular

interest because of the increased prevalence of diseases associated with vitamin D deficiency which is common in post-menopausal women. Vitamin D metabolism is changing after menopause because of reduced skin synthesis and changes in body composition.

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loss of ovarian follicular activity. The occurrence of the last menstruation can only be diagnosed retrospectively and is usually taken as being final if it is followed by a 12-month bleed-free interval; such women are defined as being post-menopausal.

METHODS

Search strategy: We will search MEDLINE (by PubMed), Embase (by OvidSP), Cochrane Central Register of Controlled Trials (CENTRAL), Google Scholar, Web of Science Core Collection, ClinicalTrials.gov, ISRCTN registry, EU Clinical Trials Register. Restriction on publication date, publication language may not be enacted. Terms used according to MeSH: ("Menopause"[Mesh] AND "Postmenopause"[Mesh]) AND ("Vitamin D"[Mesh] OR "Vitamin D Deficiency"[Mesh])"Menopause"[Mesh] AND "Postmenopause"[Mesh].

Participant or population: Post-menopausal women (physiologic and surgical menopause).

Intervention: Vitamin D Supplementations.

Comparator: None.

Study designs to be included: Randomized Clinical Trials, Controlled Clinical Trials & Cohort Studies.

Eligibility criteria: No additional inclusion or exclusion criteria.

Information sources: MEDLINE (by PubMed), Embase (by OvidSP), Cochrane Central Register of Controlled Trials (CENTRAL), Google Scholar, Web of Science Core Collection, ClinicalTrials.gov, ISRCTN registry, EU Clinical Trials Register.

Main outcome(s): The main outcome is Vitamin D status, represented by Serum levels of 25(OH)VD. It is the best indicator of overall vitamin D status because of its long half-life (10–27 days following oral or intravenous administration and 1–3 months based on the pharmacodynamic response) and Serum levels of 1, 25(OH)₂ VD.

Quality assessment / Risk of bias analysis:

All included papers will be subject to assessing the risk of bias based on guidelines outlined by the Cochrane Handbook for Systematic Reviews of Interventions (Cochrane Collaboration, 2007). Co-authors will be provided guidelines that standardize reporting of specific domains to identify potential areas of bias as part of their evaluation of study quality.

Strategy of data synthesis: Two reviewers independently will select the studies to be considered in the review, and those selected articles will be retrieved for closer examination. Differences in data extraction will be resolved by referencing original articles and discussion to establish consensus. The process of extraction will be conducted by the three reviewers independently to minimize bias and error. Citations of each article, type of study, participants' characteristics, analysis methods, type of interventions (including dosage forms, frequency), and outcomes measures will be extracted. All data and descriptives will be collected in an Epps Reviewer Platform.

Subgroup analysis: None.

Sensitivity analysis: This systematic review will not include a meta-analysis or run any quantitative analysis.

Country(ies) involved: United Arab Emirates and Malaysia.

Keywords: Vitamin D; Vitamin D Status; 25-hydroxyvitamin D; Menopause; Sex Hormones; Post-menopausal Women.

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